



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

November 10, 2011

Mr. David Heacock  
President and Chief Nuclear Officer  
Dominion Resources  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

**SUBJECT: MILLSTONE POWER STATION - NRC INTEGRATED INSPECTION REPORT  
05000336/2011004 AND 05000423/2011004**

Dear Mr. Heacock:

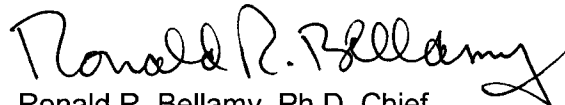
On September 30, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Millstone Power Station Unit 2 and Unit 3. The enclosed inspection report documents the inspection results, which were discussed on October 12, 2011, with Mr. A. J. Jordan and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one self-revealing finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section 2.3.2.a of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at Millstone. In addition, if you disagree with the cross-cutting aspect assigned to the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Senior Resident Inspector at Millstone.

In accordance with Title 10 of the Code of Federal Regulations (CFR) Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

A handwritten signature in black ink, reading "Ronald R. Bellamy". The signature is fluid and cursive, with the first name "Ronald" being the most prominent.

Ronald R. Bellamy, Ph.D, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

Docket Nos. 50-336, 50-423  
License Nos. DPR-65, NPF-49

Enclosure: Inspection Report No. 05000336/2011004 and 05000423/2011004  
w/Attachment: Supplemental Information

cc w/encl: Distribution via Listserv

D. Heacock

2

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Sincerely,

/RA/

Ronald R. Bellamy, Ph.D, Chief  
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## U.S. NUCLEAR REGULATORY COMMISSION

## REGION I

Docket No.: 50-336, 50-423

License No.: DPR-65, NPF-49

Report No.: 05000336/2011004 and 05000423/2011004

Licensee: Dominion Nuclear Connecticut, Inc.

Facility: Millstone Power Station, Units 2 and 3

Location: P. O. Box 128  
Waterford, CT 06385

Dates: July 1, 2011 through September 30, 2011

Inspectors: S. Shaffer, Senior Resident Inspector, Division of Reactor Projects (DRP)  
J. Krafty, Resident Inspector, DRP  
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D. Silk, Senior Operations Engineer, DRS  
B. Fuller, Operations Engineer, DRS

Approved by: Ronald R. Bellamy, PhD, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

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## TABLE OF CONTENTS

SUMMARY OF FINDINGS.....	3
REPORT DETAILS.....	4
1. REACTOR SAFETY.....	4
1R01 Adverse Weather Protection.....	4
1R04 Equipment Alignment.....	5
1R05 Fire Protection.....	5
1R07 Heat Sink Performance.....	6
1R11 Licensed Operator Requalification Program.....	7
1R12 Maintenance Effectiveness.....	9
1R13 Maintenance Risk Assessments and Emergent Work Control.....	9
1R15 Operability Evaluations.....	10
1R18 Plant Modifications.....	11
1R19 Post-Maintenance Testing.....	12
1R20 Refueling and Other Outage Activities.....	12
1R22 Surveillance Testing.....	15
1EP2 Alert and Notification System Evaluation.....	15
1EP3 Emergency Response Organization Staffing and Augmentation System.....	16
1EP4 Emergency Action Level and Emergency Plan Changes.....	16
1EP5 Correction of Emergency Preparedness Weaknesses.....	17
1EP6 Drill Evaluation.....	17
2. RADIATION SAFETY.....	18
2RS07 Radiological Environmental Monitoring Program.....	18
4. OTHER ACTIVITIES [OA].....	19
4OA1 Performance Indicator (PI) Verification.....	19
4OA2 Identification and Resolution of Problems.....	21
4OA3 Event Follow-up.....	22
4OA5 Other Activities.....	23
4OA6 Meetings, including Exit.....	24
ATTACHMENT: SUPPLEMENTAL INFORMATION.....	24
SUPPLEMENTAL INFORMATION.....	A-1
KEY POINTS OF CONTACT.....	A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED.....	A-3
LIST OF DOCUMENTS REVIEWED.....	A-3
LIST OF ACRONYMS.....	A-14

## SUMMARY OF FINDINGS

IR 05000336/2011004, 05000423/2011004; 07/01/2011 – 09/30/2011; Millstone Power Station Unit 2 and Unit 3; Refueling and Other Outage Activities.

The report covered a three-month period of inspection by resident and region-based inspectors. One Green finding, which was a non-cited violation (NCV), was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." The cross-cutting aspect was determined using IMC 0310, "Components within the Cross Cutting Areas." Findings for which the significance determination process (SDP) does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### Cornerstone: Mitigating Systems

- Green. A self-revealing NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for Dominion's failure to properly electrically isolate service water (SW) flanged joints of dissimilar metals. This caused a more rapid corrosion rate when a defect occurred in the lining of the carbon steel pipe and eventually led to a SW leak. On September 3, 2011, Dominion was forced to shut down Unit 2 when the spool leaked in excess of the limit allowed in authorized relief from American Society of Mechanical Engineers (ASME) code requirements. Dominion repaired the spool and electrically isolated the flanged joint. Dominion entered this issue into their corrective action program (CAP) CR441302.

The finding is more than minor because it is associated with the Human Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency that did not result in loss of operability, did not represent an actual loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its technical specification (TS) allowed outage time, did not represent an actual loss of safety function of one or more non-technical specification trains of equipment designated as risk significant per 10 CFR 50.65, and did not screen as risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that this finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because Dominion personnel proceeded in the face of uncertainty and/or unexpected circumstances when they had difficulty installing the isolating sleeves in the flanged joint. [H.4(a)] (Section 71111.20)

Enclosure

## REPORT DETAILS

### Summary of Plant Status

Millstone Units 2 and 3 began the inspection period operating at 100 percent power. On August 27, 2011, Unit 2 reduced power to 50 percent and Unit 3 reduced power to 70 percent prior to the arrival of Hurricane Irene on August 28. During the storm, Unit 3 reduced power to 55 percent due to problems with condenser backpressure. Unit 2 returned to 100 percent power on August 29, and Unit 3 returned to 100 percent on August 30. Unit 2 entered a forced shutdown on September 3, to fix a service water leak on the 'A' header and returned to 100 percent power on September 19.

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01 - 1 sample)

##### Impending Adverse Weather

##### a. Inspection Scope

The inspectors evaluated Dominion's preparations for Hurricane Irene on August 26. The inspectors reviewed Dominion's UFSAR and procedures to determine the plant areas most likely to be affected by the hurricane force winds and storm surge and verified that actions recommended by the procedures could reasonably be completed. The inspectors spoke with supervision and determined actions were being taken to remove or secure potential missile hazards, additional personnel were being scheduled into the site, and that fatigue restrictions were considered in their planning. The inspectors also walked down the site in order to verify that the potential missile hazards were being addressed. Documents reviewed for each section of this inspection report are listed in the Attachment

##### b. Findings

No findings were identified.

Enclosure

1R04 Equipment Alignment (71111.04 - 5 samples)Partial System Walkdownsa. Inspection Scope

The inspectors performed five partial system walkdowns during this inspection period. The inspectors reviewed the documents listed in the Attachment to determine the correct system alignment. The inspectors performed a walkdown of each system to determine if the critical portions of the selected systems were correctly aligned, in accordance with the procedures, and to identify any discrepancies that may have had an effect on operability. The walkdowns included selected switch and valve position checks, and verification of electrical power to critical components. Finally, the inspectors evaluated other elements, such as material condition, housekeeping, and component labeling. The following systems were reviewed based on their risk significance for the given plant configuration:

Unit 2

- 'B' Spent Fuel Pool Cooling when the 'A' train was out of service (OOS) for maintenance on September 1, 2011
- 'B' SW header when the 'A' train was OOS for a spool replacement on September 7, 2011

Unit 3

- 'B' Instrument Air Compressor (IAC) when the 'A' IAC was OOS for maintenance on July 28
- 'A' High Pressure Safety Injection (SI) when the 'B' train of SI was OOS for maintenance on July 28
- 'A' Recirculation Spray System (RSS) when the 'B' train of RSS was OOS for maintenance on July 29

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05Q – 6 samples)a. Inspection Scope

The inspectors performed walkdowns of six fire protection areas. The inspectors reviewed Dominion's fire protection program to determine the required fire protection design features, fire area boundaries, and combustible loading requirements for the selected areas. The inspectors walked down these areas to assess Dominion's control of transient combustible material and ignition sources. In addition, the inspectors evaluated the material condition and operational status of fire detection and suppression

Enclosure



capabilities, fire barriers, and any related compensatory measures. The inspectors compared the existing conditions of the areas to the fire protection program requirements to determine if all program requirements were being met. The fire protection areas reviewed included:

Unit 2

- Enclosure Building, Fire Area E-1
- 'B' Emergency Diesel Generator (EDG), Fire Area A-16
- DC Switchgear, Fire Area T-1
- West 480V Load Center, Fire Area T-6

Unit 3

- Fire Pump House, Fire Area FP-1
- 'A' EDG, Fire Area EG-3

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.7A – 1 sample)

a. Inspection Scope

The inspectors observed the as-found condition of the 3EGS\*E1A ('A' EDG air cooler) and E2A ('A' EDG jacket water cooler) heat exchanger after it was noted to be approaching the ALERT level in performance monitoring. The inspectors reviewed the results of the inspections against the acceptance criteria contained within the procedure to determine whether all acceptance criteria had been satisfied. The inspectors also reviewed the UFSAR to ensure that heat exchanger inspection results were consistent with the design basis and reviewed the test criteria to ensure the performance test was appropriate for the type of service.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q – 2 samples)

a. Inspection Scope

The inspectors observed simulator-based licensed operator requalification training for Unit 2 on August 24 and for Unit 3 on August 23. The inspectors evaluated crew performance in the areas of clarity and formality of communications; ability to take timely actions; prioritization, interpretation, and verification of alarms; procedure use; control board manipulations; oversight and direction from supervisors; and command and control. Crew performance in these areas was compared to Dominion management expectations and guidelines as presented in TR-AA-730, "Licensed Operator Biennial and Annual Operating Requalification Exam Process," Revision 3. The inspectors compared simulator configurations with actual control board configurations. The inspectors also observed Dominion evaluators discuss identified weaknesses with the crew and/or individual crew members, as appropriate.

b. Findings

No findings were identified.

.2 Licensed Operator Regualification (71111.11B – 1 sample)

a. Inspection Scope

Inspection activities were performed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, Inspection Procedure Attachment 71111.11, "Licensed Operator Requalification Program," Appendix A, "Checklist for Evaluating Facility Testing Material," and Appendix B, "Suggested Interview Topics."

A review was conducted of recent operating history documentation found in inspection reports, Dominion's corrective action program, and the most recent NRC plant issues matrix (PIM). The inspectors also reviewed specific events from Dominion's corrective action program which indicated possible training deficiencies, to verify that they had been appropriately addressed. The NRC senior resident inspector was also consulted for insights regarding licensed operators' performance. These reviews did not detect any operational events that were indicative of possible training deficiencies.

The operating tests for the week of August 29, 2011, were reviewed for quality and performance. On September 29, 2011, the results of the annual operating tests for year 2011 for Millstone Unit 2 and Unit 3 were reviewed to determine if pass fail rates were consistent with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)." (The biennial written examinations were not

Enclosure

administered this year). The review verified the following:

Unit 2

- Crew pass rates were greater than 80 percent. (Pass rate was 90.4 percent)
- Individual pass rates on the dynamic simulator test were greater than 80 percent. (Pass rate was 90.0 percent)
- Individual pass rates on the job performance measures of the operating exam were greater than 80 percent. (Pass rate was 96.0 percent)
- More than 75 percent of the individuals passed all portions of the exam. (84.0 percent of the individuals passed all portions of the operating examination)

Unit 3

- Crew pass rates were greater than 80 percent. (Pass rate was 100 percent)
- Individual pass rates on the dynamic simulator test were greater than 80 percent. (Pass rate was 100 percent)
- Individual pass rates on the job performance measures of the operating exam were greater than 80 percent. (Pass rate was 100 percent)
- More than 75 percent of the individuals passed all portions of the exam. (100 percent of the individuals passed all portions of the operating examination)

Observations were made of the dynamic simulator exams and job performance measures administered during the week of August 29, 2011, to Shift 'A'. These observations included facility evaluations of crew and individual performance during the dynamic simulator exams and individual performance of five JPMs.

The remediation plans for a crew/individual's failure and a written failure were reviewed to assess the effectiveness of the remedial training. Two senior reactor operator license activations were reviewed to ensure that 10 CFR 55.53 license conditions and applicable program requirements were met.

Operators, instructors, and training/operation's management were interviewed for feedback on their training program and the quality of training received. Simulator performance and fidelity were reviewed for conformance to the reference plant control room. A sample of records for requalification training attendance, program feedback, reporting, and medical examinations were reviewed for compliance with license conditions, including NRC regulations.

b. Findings

No findings were identified.

Enclosure

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)a. Inspection Scope

The inspectors reviewed two samples of Dominion's evaluation of degraded conditions, involving safety-related structures, systems and/or components for maintenance effectiveness during this inspection period. The inspectors reviewed Dominion's implementation of the "Maintenance Rule," 10 CFR 50.65. The inspectors reviewed Dominion's ability to identify and address common cause failures, the applicable maintenance rule scoping document for each system, the current classification of these systems in accordance with 10 CFR 50.65 (a)(1) or (a)(2), and the adequacy of the performance criteria and goals established for each system, as appropriate. The inspectors also reviewed recent system health reports, Condition Reports (CR), apparent cause determinations, functional failure determinations, operating logs, and discussed system performance with the responsible system engineer.

The specific systems/components reviewed were:

Unit 2

- Periodic (a)(3) Evaluation dated May 19, 2011; and
- Foxboro SPEC 200 Racks.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 7 samples)a. Inspection Scope

The inspectors evaluated online risk management for emergent and planned activities. The inspectors reviewed maintenance risk evaluations, work schedules, and control room logs to determine if concurrent planned and emergent maintenance or surveillance activities adversely affected the plant risk already incurred with OOS components. The inspectors evaluated whether Dominion took the necessary steps to control work activities, minimize the probability of initiating events, and maintain the functional capability of mitigating systems. The inspectors assessed Dominion's risk management actions during plant walkdowns. The inspectors reviewed the conduct and adequacy of risk assessments for the following maintenance and testing activities:

Unit 2

- Green risk on August 1 with the station blackout (SBO) diesel, Reactor Building component cooling water (RBCCW), and SI OOS due to electrical bus outages;
- High trip risk on August 19 associated with replacement of ZT-5269, 'B' feedwater regulating valve position transmitter;
- Yellow risk on September 6 with the plant in mode 5 and the 'A' SW header OOS to replace a leaking 10 inch spool piece

Unit 3

- Emergent work on August 1 for the TDAFW pump for steam leakage past AOV31A/B and 'D'
- Emergent work on August 11 repairing a Freon leak on 3VHQ\*ACUS1B Train 'B' ESF support air conditioner;
- Green risk on August 17, power reduction to support work on 3DSM\*E1B, RSS System PMs, ESF Ground water sump and protection set #4; and
- Green risk on August 31, for replacement of RWST level switches for DC MP3-11-01008, Refueling Water Storage Tank Level Switch Upgrade.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15 – 11 samples)a. Inspection Scope

The inspectors reviewed eleven operability determinations (ODs). The inspectors evaluated the ODs against the guidance contained in NRC Regulatory Issue Summary 2005-20, Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability." The inspectors also discussed the conditions with operators and system and design engineers, as necessary. The inspectors reviewed the adequacy of the following evaluations of degraded or non-conforming conditions:

Unit 2

- RAS 000182, which covers an extension to the allowed TRM time limit for compensatory cooling to the West 480 volt switchgear room
- OD000428, Control Room Air Conditioning System, Z1 Train, degraded condition due to excess oil
- OD000214, Nitrogen leak on the #3 safety injection tank (SIT)
- OD000436, SW leak on spool SK-2952, SW to the 'A' EDG
- CR434798, MP2 EDG SW discharge common header structural integrity

Enclosure

- OD000281, Westinghouse non conservative error in Millstone 2 LOCA containment analysis
- CR442835, 2-RC-402 (PORV) did not stroke during performance of SP 2610M, and an engineering technical review paper demonstrating full design compliance

### Unit 3

- CR438375, 3HVR\*FN5, Aux Building Ventilation / SLCRs Operability
- CR438239, EDG Belleville Washers - installed non-safety grade material
- RAS for CR437419, Gamma Metric Wide Range Logarithmic Neutron Flux Accident Monitors
- ODM000192, 'D' RCP Seal Leakoff

#### b. Findings

No findings were identified.

### 1R18 Plant Modifications (71111.18 – 1 sample)

#### a. Inspection Scope

The inspectors assessed the adequacy of modification MP3-11-01008, Refueling Water Storage Tank Level Switch Upgrade. The inspectors performed walkdowns of selected plant systems and components, interviewed plant staff, and reviewed applicable documents, including procedures, calculations, modification packages, engineering evaluations, drawings, corrective action program documents, the UFSAR, and TS. The inspectors determined whether selected attributes (component safety classification, energy requirements supplied by supporting systems, seismic qualification, instrument setpoints, uncertainty calculations, electrical coordination, electrical loads analysis, and equipment environmental qualification) were consistent with the design and licensing bases. Design assumptions were reviewed to verify that they were technically appropriate and consistent with the UFSAR. For each modification, the 10 CFR 50.59 screenings or safety evaluations were reviewed. The inspectors also verified that procedures, calculations, and the UFSAR were properly updated with revised design information. In addition, the inspectors verified that the as-built configuration was accurately reflected in the design documentation and that post-modification testing was adequate to ensure the structures, systems, and components would function properly.

#### b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)a. Inspection Scope

The inspectors reviewed post-maintenance test (PMT) activities to determine whether the PMT adequately demonstrated that the safety-related function of the equipment was satisfied, given the scope of the work specified, and that operability of the system was restored. In addition, the inspectors evaluated the applicable test acceptance criteria to evaluate consistency with the associated design and licensing bases, as well as TS requirements. The inspectors also evaluated whether conditions adverse to quality were entered into the corrective action program for resolution. The following maintenance activities and PMTs were evaluated:

Unit 2

- SP 2411, "CEA Motion Inhibit Verification (OL, OOS, PDIL) Functional Test Data," Revision 002-08 following replacement of the CPU battery
- SP 2610BO-002, "TDAFP and Recirculation Check Valve IST," Revision 000-05 following replacement of bearing oil sight glass and valves on the suction line and pump vent
- Magnetic particle examination and visual examination of the butt weld on the flange replacement on the 10 inch SW line to the 'A' EDG
- SP 2604P-001, "ESF Equipment Response Times," Revision 012-01 following replacement of 2-FW-51B ('B' feed water regulating valve) positioned
- SP21238, "RCS Leak Test," Revision 005-00 following replacement of 'C' RCP pump seal

Unit 3

- SP 3441E01, "Gamma-Metric Neutron Flux/Shutdown Margin Monitor Channel Calibration," Revision 011-01 PMT for Gamma Metrics Channel 2 Repairs

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)Millstone Unit 2 Forced Outagea. Inspection Scope

On September 3, 2011, Millstone Unit 2 conducted a plant shutdown and entered a forced outage to repair a SW leak on the 'A' header. The inspectors reviewed the shutdown risk in order to verify that the unavailable 'A' SW header was properly protected when assessing plant risk. The inspectors observed portions of the shutdown and subsequent startup and power ascension evolutions. The inspectors verified that

Enclosure

conditions adverse to quality discovered during the outage were entered into Dominion's CAP for resolution.

b. Findings

Introduction. A self-revealing Green NCV of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for Dominion's failure to properly electrically isolate service water (SW) flanged joints of dissimilar metals. Specifically, several of the electrically isolating sleeves for the studs were damaged when assembling the flanges joining the ten inch carbon steel SW spool piece to the AL-6XN spool piece. This caused a more rapid corrosion rate when a defect occurred in the lining of the carbon steel pipe. This eventually led to a SW leak and a forced plant shutdown.

Description. On August 17, 2011, Millstone Unit 2 operators identified a through wall leak on the flange of SK-2952, which is a 10 inch PVC lined carbon steel SW spool piece. The carbon steel spool was bolted to SK-2951A, an AL-6XN spool piece. This portion of the SW system provides SW to the 'A' EDG and could not be isolated from the 'A' SW header during operation. Dominion performed ultrasonic testing (UT) of the flange and determined that the defect was localized between two of the bolt holes on the flange. Dominion's assessment was that structural integrity was maintained and asked for relief from ASME code requirements which was verbally granted for a period of four months on August 20, 2011. On September 3, 2011, the leak increased from approximately 6 ml/minute to 15 gallon/minute, and the unit was shut down as required by the conditions of the authorized relief.

Upon disassembling the system for repairs, Dominion discovered that several of the electrically isolating sleeves for the studs were damaged upon removal from the dissimilar metal flanged joint. Dominion concluded that the sleeves were damaged due to improper installation. An October 2009 work order ( 53102198311) replaced the existing plastic lined carbon steel spool SK-2951A with an AL-6XN spool. Included in the work order was drawing 25203-20150, Sheet 471, "'A' Train Service Water Supply to Diesel Engine Coolers," Revision 0, which specified installing an isolation kit consisting of plastic or phenolic washers and sleeves with the fasteners. Electrically isolating the carbon steel flange from the AL-6XN flange is necessary to prevent accelerated galvanic corrosion of the carbon steel spool piece should a defect occur in the plastic lining. The inspectors concluded that the damaged isolating sleeves caused accelerated corrosion of the carbon steel spool and resulted in a failure of the spool piece earlier than expected. Dominion repaired the spool, properly installed the electrical isolation kits in the dissimilar metal flanged joint, and returned the component to service.

Analysis. The inspectors determined that the failure to properly install the isolating sleeves on all the studs for the ten inch SW spool was a performance deficiency that was reasonably within Dominion's ability to foresee and correct, and should have been prevented. Traditional enforcement does not apply since there were no actual safety consequences, impacts on the NRC's ability to perform its regulatory function, or willful aspects of the finding. The inspectors performed a review of IMC 0612, Appendix E,

Enclosure



"Examples of Minor Issues," and determined that the performance deficiency was not similar to any of the examples. The inspectors determined that the finding was more than minor because it is associated with the Human Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

The inspectors conducted a Phase 1 screening in accordance with NRC Inspection Manual Chapter (IMC) Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency that did not result in loss of operability, did not represent an actual loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its TS allowed outage time, did not represent an actual loss of safety function of one or more non-technical specification trains of equipment designated as risk significant per 10 CFR 50.65, and did not screen as risk significant due to a seismic, flooding, or severe weather initiating event.

The inspectors determined that this finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because Dominion personnel proceeded in the face of uncertainty and/or unexpected circumstances when they had difficulty installing the isolating sleeves in the flanged joint. [H.4(a)]

Enforcement. 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, on October 20, 2009, Dominion did not properly electrically isolate the joint joining the AL-6XN spool piece to the carbon steel spool piece when they damaged several of the isolating sleeves for the studs upon installation into the flanges. Dominion took corrective action to repair the spool and electrically isolate the flanged joint when the spool leaked in excess of the limit allowed in authorized relief from ASME code requirements. Because this finding was of very low safety significance (Green) and has been entered into Dominion's corrective action program (CR441302), this violation is being treated as an NCV, consistent with the NRC Enforcement Policy. **(NCV 05000336/2011004-01, Failure to Electrically Isolate a Dissimilar Metal Flanged Joint Leads to Forced Shutdown Due to Service Water Leak)**

1R22 Surveillance Testing (71111.22 – 5 samples)a. Inspection Scope

The inspectors reviewed surveillance activities to determine whether the testing adequately demonstrated equipment operational readiness and the ability to perform the intended safety-related function. The inspectors attended pre-job briefings, reviewed selected prerequisites and precautions to determine if they were met, and observed the tests to determine whether they were performed in accordance with the procedural steps. Additionally, the inspectors reviewed the applicable test acceptance criteria to evaluate consistency with associated design bases, licensing bases, and TS requirements and that the applicable acceptance criteria were satisfied. The inspectors also evaluated whether conditions adverse to quality were entered into the corrective action program for resolution. The following surveillance activities were evaluated:

Unit 2

- SP 2605G-005, "RM-8123A/B CIV Stroke and Timing IST," Revision 003-05 (CIV)

Unit 3

- SP 3646A.8-010, "Containment Isolation Phase A S920 – Relay K630, Slave Relay Actuation," Revision 002 (CIV)
- SP-3464A.1, "'A' EDG Sequencer Start and Operability Test," Revision 018-05
- SP-3622.2, "'B' MD Auxiliary Feedwater Pump (AFW) Pump Operational Test," Revision 016-02
- SP-3441E01, "Gamma-Metric Neutron Flux/Shutdown Margin Monitor Channel Calibration

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness (EP)**1EP2 Alert and Notification System (ANS) Evaluation (71114.02 - 1 sample)a. Inspection Scope

Since the last program inspection, Millstone Power Station replaced their ANS with a new system that was activated in July 2010. An onsite review was conducted to assess the maintenance and testing of the new system. During this inspection, the inspectors interviewed EP staff responsible for implementation of the ANS testing and maintenance programs. CRs pertaining to the ANS were reviewed for causes, trends, and corrective actions. In addition, the inspectors observed a monthly activation test of the sirens located in the Town of East Lyme from the 911 Dispatch Center and interviewed those employees responsible for conducting the test and for activating the system during an

Enclosure

actual emergency. The inspectors reviewed the associated ANS procedures and the FEMA-approved ANS Design Report to ensure Dominion's compliance with design report commitments for system maintenance and testing. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment .02. Planning Standard, 10 CFR 50.47(b) (5) and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization (ERO) Staffing and Augmentation System  
(71114.03 - 1 sample)

a. Inspection Scope

The inspectors performed a review of Millstone's ERO augmentation staffing requirements and the process for notifying and augmenting the ERO. The review was performed to ensure the readiness of key licensee staff to respond to an emergency event and to ensure Dominion's ability to activate their emergency response facilities in a timely manner. The inspectors reviewed the Millstone Emergency Plan, duty roster, and augmentation reports. The inspectors also reviewed a sampling of ERO responder's training records to ensure training and qualifications were up to date. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 3. Planning Standard, 10 CFR 50.47(b)(2) and related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04 - 1 sample)

a. Inspection Scope

Since the last NRC inspection of this program area, in October 2010, Dominion implemented various revisions to the Millstone Emergency Plan. Dominion had determined that, in accordance with 10 CFR 50.54(q), these changes made to the Plan, and its lower-tier implementing procedures, had not resulted in any decrease in effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR 50. The inspectors reviewed all EAL changes and a sample of emergency plan changes, including the changes to lower-tier emergency plan implementing procedures, for any potential decreases in effectiveness of the Millstone Emergency Plan for the period of September 2010 to July 2011. However, this review by the inspectors was not documented in an NRC Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. The

Enclosure

inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 4. The requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses (71114.05 - 1 sample)

a. Inspection Scope

The inspectors reviewed a sampling of drill reports, two 10 CFR 50.54(t) audit reports and a self-assessment report to assess Dominion's ability to evaluate their EP performance and program. The inspectors reviewed a sampling of CRs initiated from September 2009 through July 2011 by Dominion at Millstone from drills, self-assessments, and audits. This inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 5, Planning Standard, 10 CFR 50.47(b)(14) and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06 – 1 sample)

a. Inspection Scope

The inspectors reviewed the operator's emergency classification and notification completed during Unit 3's requalification training on August 23. The inspectors verified the event classification and notification were accurate and timely.

b. Findings

No findings were identified.

## 2. RADIATION SAFETY

### Cornerstone: Public and Occupational Radiation Safety

2RS07 Radiological Environmental Monitoring Program (REMP) (71124.07 - 1 sample)

#### a. Inspection Scope

During the period August 22 - 25, 2011, the inspectors conducted the following activities to verify that Dominion implemented the radiological environmental monitoring program (REMP) consistent with the TSs and the Off-Site Dose Calculation Manual (ODCM) to validate that radioactive effluent releases met the design objectives of Appendix I to 10 CFR Part 50.

This inspection activity represents completion of one sample relative to this inspection area, completing the biennial requirement.

The inspectors reviewed the 2009 and 2010 Annual Radiological Environmental Operating Reports and the 2010 REMP Land Use Census Report to verify that the environmental monitoring programs were implemented as required by the ODCM.

The inspectors walked down eight air sampling stations (Nos. 1-I, 2-I, 3-I, 4-I, 10-I, 11-I, 15-C, 27-I), one seawater sampling station (No.32-I), one oyster harvesting station (No. 31-I ), and twenty (of 40) thermoluminescent (TLD) monitoring stations. The inspectors determined that sampling was conducted as described in the ODCM related procedures, and evaluated the sampling equipment material condition. The inspectors confirmed that the air sampling locations were in areas having high X/Q and D/Q wind sectors, and the TLDs were located in areas with the highest potential for public exposure.

As part of the walk down, the inspectors observed the technician collecting and prepare for analysis air particulate/iodine filter samples, oyster, and water samples, and verified that environmental sampling was representative of the release pathways, as specified in the ODCM, and that sampling techniques were in accordance with procedures.

Based on direct observation and review of records, the inspectors verified that the meteorological instrumentation was operable, calibrated, and maintained in accordance with the guidance contained in the FSAR, NRC Safety Guide 23, and with Dominion procedures. The inspectors verified that the meteorological data readout and recording instruments in the control room and at the tower were operable for wind direction, wind speed, air temperature, and delta temperature. The inspectors confirmed that redundant instrumentation was available and that the annualized recovery rate for meteorological data was greater than 90 percent. The inspectors reviewed the calibration/maintenance records for eight air samplers and verified that the air flow calibration equipment was currently calibrated.

Enclosure

The inspectors reviewed CRs and Nuclear Oversight field observation reports and audit, relevant to the REMP requirements, to evaluate the threshold for which issues are entered into the corrective action program, the adequacy of subsequent evaluations, and the effectiveness of the resolution. The inspectors' reviewed monthly RETS/ODCM effluent occurrence reports to evaluate the adequacy and timeliness of performance indicator information.

The inspectors reviewed the quarterly results of Dominion's inter-laboratory comparison program to verify the accuracy of their environmental air filter, charcoal cartridge, water, biota, and milk sample analyses. Additionally, the inspectors reviewed the annual quality assurance audit of Dominion's vender providing environmental analytical services.

The inspectors reviewed changes made by Dominion to the ODCM as a result of changes to the land use census or sampler station modifications since the last inspection. The inspectors also reviewed technical justifications for any change in sampling location (or frequency) and verified that Dominion performed the reviews required to ensure that the changes did not affect its ability to monitor the radiological condition of the environment.

The inspectors confirmed that Dominion is implementing an onsite groundwater sampling and monitoring program sufficient to detect leakage from plant systems, structures and components. Included in this review was an evaluation of potential leakage from the Unit 3 refueling water storage tank, various radiological waste storage tanks, and foundation sumps.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES [OA]**

4OA1 Performance Indicator (PI) Verification (71151)

.1 Cornerstone: Emergency Preparedness (3 samples)

a. Inspection Scope

The inspectors reviewed data for Emergency Preparedness PIs listed below. The last NRC EP inspection at Millstone was conducted in the fourth quarter of 2010, so the inspectors reviewed supporting documentation from EP drills, training records, and equipment tests from the fourth calendar quarter of 2010 through the second quarter of 2011, to verify the accuracy of the reported PI data. The review of these PIs was conducted in accordance with NRC Inspection Procedure 71151, using the acceptance criteria documented in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 6.

Enclosure

- Drill and Exercise Performance
- ERO Drill Participation
- ANS Reliability

b. Findings

No findings were identified.

.2 Cornerstone: Mitigating Systems (10 samples)

a. Inspection Scope

The inspectors reviewed Dominion submittals for the PIs listed below to verify the accuracy of the data reported during that period. The PI definitions and guidance contained in NEI 99-02 were used to verify the basis for reporting each data element. The inspectors reviewed portions of the operations logs, monthly operating reports, and LERs and discussed the methods for compiling and reporting the PIs with cognizant licensing and engineering personnel.

Unit 2

- Mitigating System Performance Index (MSPI) High Pressure Safety Injection (HPSI) System
- MSPI AFW System
- MSPI Emergency AC Power System
- MSPI Residual Heat Removal (RHR) System
- MSPI Support Cooling Water System

Unit 3

- Mitigating System Performance Index (MSPI) High Pressure Safety Injection (HPSI) System
- MSPI AFW System
- MSPI Emergency AC Power System
- MSPI Residual Heat Removal (RHR) System
- MSPI Support Cooling Water System

b. Findings

No findings were identified.

.3 RETS/ODCM Radiological Effluent Occurrences (1 sample)

a. Inspection Scope

The inspector reviewed relevant effluent release reports for the period October 2010 through July 2011, for issues related to the public radiation safety performance indicator as specified in NEI 99-02. The NEI criteria for reporting performance indicator includes radiological effluent release occurrences that exceed 1.5 mrem/qtr whole body or 5.0 mrem/qtr organ dose for liquid effluents; 5mrads/qtr gamma air dose, 10 mrad/qtr beta air dose, and 7.5 mrads/qtr for organ dose for gaseous effluents. This inspection activity represents the completion of one sample relative to this inspection area; completing the annual inspection requirements.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into Dominion's corrective action program. This was accomplished by reviewing the description of each new CR and attending daily management review committee meetings.

b. Findings

No findings were identified.

.2 Annual Sample-Operator Workarounds (2 samples)

a. Inspection Scope

The inspectors performed an in-depth review of Unit 2 and Unit 3 workarounds. The inspectors reviewed the operations aggregate impact database (OPSTAT) and procedure, and interviewed operations personnel in order to determine if deficiencies affecting operators were being appropriately characterized and prioritized.



b. Findings and Observations

No findings were identified.

The inspectors determined that, in general, conditions that had a negative impact on shift operations were being entered into the OPSTAT database and evaluated. However, Unit 2 standing order, SO-11-011, which imposed additional operator actions in the event of a plant downpower, due to the second stage MSR reheat low load valves possibly not closing as required when in an automatic mode, had not been entered in to the OPSTAT database.

In addition, the inspectors identified that deficiencies identified as control panel issues on both units are not considered as control room deficiencies per the OPSTAT database instructions although they appear to fit the definition in OP-AA-1700, "Operations Aggregate Impact." Operations had been following a previous site procedure deviated from the fleet procedure requirement by not including control panel deficiencies in the OPSTAT database and Operator Work Around performance indicator. Dominion entered this issue into their corrective action program, CR446133, and promptly corrected the problem.

4OA3 Event Follow-up (71153 – 2 samples)

.1 (Closed) LER 05000336/2011-002 Reactor Trip on Low Steam Generator Level

a. Inspection Scope

On June 20, 2011, Millstone Unit 2 was at 59 percent power when the reactor automatically tripped on low SG level. Unit 2 had reduced power to 30 percent in order to repair an oil leak on the 'C' reactor coolant pump. Following the repair, operators began increasing power to return to 100 percent. At the time of the trip, the operators were in the process of placing the second feedwater pump in service. The recirculation flow from the second feedwater pump back to the condenser caused the running feedwater pump to trip on low suction pressure. The loss of feedwater flow to the SG caused the levels to lower until the reactor tripped on low SG level.

b. Findings

This issue was previously documented in NRC Inspection Report 05000336/2011003 as a Green finding. The LER was reviewed and no additional findings were identified. This LER is closed.

.2 Event Response to Hurricane Irene

a. Inspection Scope

On August 27, 2011, Millstone Unit 2 and Unit 3 reduced power to 50 percent and 70 percent respectively in anticipation of Hurricane Irene arriving on shore. Prior to the

Enclosure

onset of tropical force winds, NRC inspectors completed IP 71111.01, "Impending Adverse Weather," to ensure the site was prepared for hurricane force winds and the potential storm surge. During the storm, NRC inspectors staffed the control rooms of both units from the onset of tropical storm winds until the storm had passed. Following the storm, the NRC inspectors conducted a walkdown and damage assessment of both units. Unit 2 returned to 100 percent power on August 29 and Unit 3 returned to 100 percent power on August 30.

b. Findings and Observations

No findings were identified.

During the storm, Unit 3 experienced a loss of condenser backpressure in the 'A' condenser bay and manually tripped the 'A' CW pump prior to exceeding the trip set point. The Unit 3 control room operators entered AOP 3575, "Rapid Downpower," and successfully conducted a power reduction to 55 percent. During the storm, numerous grid instabilities occurred but both units stayed on line, in Mode 1 until the storm had passed. The loss of the Flanders service line resulted in loss of house power to numerous administrative buildings that were not in the power block and to Unit 1. The site lost normal telephone service, access to the Dominion LAN and Internet, and non-safety systems powered from this service line. The meteorological tower and backup meteorological tower did not provide meteorological parameters during the storm due to a loss of electrical power. The plant safety systems were not degraded. The newly installed emergency notification sirens were not significantly degraded as the battery backup power supplies maintained power to all sirens that had lost electrical line power. The post-storm damage assessment revealed no significant damage. All systems were restored by August 29, 2011.

4OA5 Other Activities – (1 sample)

Independent Spent Fuel Storage Installation (ISFSI) Monitoring Controls (60855.1)

a. Inspection Scope

The inspectors reviewed routine operations and monitoring of the ISFSI. The inspectors walked down the ISFSI to evaluate its material condition, performed independent dose rate measurements of the storage modules, and confirmed module temperatures were within the required limits. The inspectors also reviewed plant equipment operator logs for ISFSI surveillances and environmental (ISFSI) dosimetry records. Radiological control activities for the ISFSI were evaluated against 10 CFR Part 20, ISFSI TSs, and with Dominion's procedures.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

Exit Meeting Summary

On October 12, 2011, the resident inspectors presented the overall inspection results to Mr. A. J. Jordan and members of his staff. The inspectors confirmed that no proprietary information was provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

**SUPPLEMENTAL INFORMATION****KEY POINTS OF CONTACT**Dominion personnel

L. Armstrong	Manager, Training
G. Auria	Nuclear Chemistry Supervisor
B. Barron	Manager, Nuclear Oversight
B. Bartron	Supervisor, Licensing
T. Berger	Unit 3 Shift Manager
D. Burley	Unit 3 Control Room Supervisor
E. Brodeur	Unit 3 Shift Manager
C. Chapin	Assistant Operations Manager
W. Chestnut	Supervisor, Nuclear Shift Operations Unit 2
F. Cietek	Nuclear Engineer, PRA
T. Cleary	Licensing Engineer
G. Closius	Licensing Engineer
J. Cote	Unit 3 Control Operator
L. Crone	Supervisor, Nuclear Chemistry
J. Curling	Manager, Protection Services
P. Dillon	Nuclear Engineer III
J. Dorosky	Health Physicist III
M. Finnegan	Supervisor, Health Physics, ISFSI
M. Galipeau	Unit 3 I&C Supervisor
A. Gharakhanian	Nuclear Engineer III
T. Gibson	Unit 3 Plant Equipment Operator
W. Gorman	Supervisor, Instrumentation & Control
J. Grogan	Supervisor, Nuclear Training
K. Grover	Manager, Nuclear Operations
C. Houska	I&C Technician
A. Jordan	Site Vice President
J. Kunze	Supervisor, Nuclear Operations Support
J. Laine	Manager, Radiation Protection/Chemistry
S. Lambert	Unit 3 Unit Supervisor
L. LeBaron	Nuclear Engineer III
B. Lepine	Unit 3 Plant Equipment Operator
M. Logan	I&C Technician
R. MacManus	Director, Nuclear Station Safety & Licensing
P. Malzahn	Supervisor Nuclear Operations Support
G. Marshall	Manager, Outage and Planning
M. Martell	Unit 3 Shift Manager
R. McDonald	Senior Instructor (Nuclear Operations)
M. Noniewcz	Unit 3 Control Operator
R. Peters	I&C Technician
B. Pinkowitz	Senior Instructor (Nuclear Operations)
T. Rigney	Emergency Preparedness Specialist IV

A-2

R. Riley	Supervisor, Nuclear Shift Operations Unit 3
M. Roche	Senior Nuclear Chemistry Technician
D. Rowe	Unit 3 Shift Manager
L. Salyards	Licensing, Nuclear Technology Specialist
M. Sartain	Director, Nuclear Engineering
M. Sebilus	Unit 3 Reactor Operator
J. Semancik	Plant Manager
P. Sikorsky	Unit 2 Shift Manager
A. Smith	Asset Management
D. Smith	Manager, Emergency Preparedness
S. Smith	Manager, Nuclear Site Engineering
J. Stoddard	Unit 3 Shift Manager
J. Spalter	Unit 3 Unit Supervisor
S. Turowski	Supervisor, Health Physics Technical Services
M. Vigneau	Unit 3 Shift Technical Advisor
C. Vournazos	IT Specialist, Meteorological Data
W. Woolery	Unit 2 Shift Manager

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened and Closed

05000336/2011004-01	NCV	Failure to Electrically Isolate Dissimilar Metal Flanged Joint Leads to Forced Shutdown Due to Service Water Leak (Section 1R20)
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Closed

05000336/2011-002	LER	Reactor Trip on Low Steam Generator Level (Section 4OA3)
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**LIST OF DOCUMENTS REVIEWED**

**Section 1R01: Adverse Weather Protection**

AOP 2560, "Storms, Winds and High Tides," Revision 010-06  
AOP 3569, "Severe Weather Conditions," Revision 017-00

**Section 1R04: Equipment Alignment**

OP 2305-001, "Spent Fuel Pool Cooling," Revision 012-00  
OP 2326A-002, "Service Water Alignment Verification, Facility 2," Revision 000-04  
OP 3332A-001, "Instrument Air System – Valve Lineup," Revision 008-08  
OP 3332C-001, "Service Air System - Valve Lineup," Revision 008-03  
Spent Fuel Pool Cooling and Purification System Health Report, 2<sup>nd</sup> quarter 2011

**Section 1R05: Fire Protection**

Millstone Unit 2 Fire Hazards Analysis, Revision 9  
Millstone Unit 2 Firefighting Strategies, April 2002  
Millstone Unit 3 Fire Protection Evaluation Report  
Millstone Unit 3 Firefighting Strategies, April 2002

**Section 1R07: Heat Sink Performance**

EPRI NP-7552, "Heat Exchanger Performance Monitoring Guidelines," dated December 1991  
SP-3626.13, "SW Heat Exchanger Fouling Determination," Revision 020-08  
SP3626.13-002, "CCI and EGS Train 'A' Heat Exchanger Fouling Determination," Revision 016-05 data sheets for the dates January 3, 2011, April 25, 2011; May 2, 9, 16, 23, 30, 2011; June 6, 13, 20, 27, 2011; July 4, 11, 18, 25, 2011 and August 1, 2011  
CR436557, "EGS Train 'A' Heat Exchanger fouling is just below the Alert range," dated August 1, 2011  
CR330751, "HVR and EDG Debris Loading Curve Issues," dated April 13, 2009  
CR440220, "SW Fouling for 'A' EDG in ALERT range," dated August 29, 2011  
RAS CR 330751, "HVR and EGS Fouling Action Curve Issues"  
MRE010555, "HVR and EDG Debris Loading Curve Issues"  
System Health Report, EDG, 2<sup>nd</sup> Quarter 2011

**Section 1R11: Licensed Operator Requalification Program**

AOE #5, "MP2 LORT annual Operating Exam," Revision 7/0  
 TR-AA-730, "Licensed Operator Biennial and Annual Operating Requalification Exam Process,"  
 Revision 3  
 Licensed Operator Requalification Simulator Scenario SE62  
 AOP 3575, "Rapid Downpower," Revision 017-05  
 EOP 35 E-0, "Reactor Trip or Safety Injection," Revision 026-00  
 EOP 35 E-1, "Loss of Reactor or Secondary Coolant," Revision 024-00  
 EOP 35 E-3, "Steam Generator Tube Rupture," 023-00  
 EOP 35 FRS.1, "Response to Nuclear Power Generation / ATWS," Revision 019-00  
 EOP 35 FRZ.1, "Response to Containment High Pressure," Revision 016-02  
 CR440209, "A '1' for Human performance was given during an evaluated simulator session,"  
 dated August 26, 2011  
 MP3 2010 Biennial Written Exam Analysis  
 MP-14-OPS-GDL200, Conduct of Operations, Revision 12 (Superseded)  
 MP-14-OPS-GDL401, Operations Department Work Control Guideline & Expectations, Revision  
 2-2  
 OP-AA-100, Conduct of Operations, Revision 14  
 TIG-05, Operator Training Written Examinations, Revision 001  
 TIG-06, Operator Licenses, Revision 000  
 TR-AA-710, NRC Exam Security Requirements, Revision 2  
 TPD-7.080, Licensed Operator Requalification Training, Revision 12  
 TR-AA-730, Licensed Operator Biennial/Annual Operating Requalification Exam Process,  
 Revision 3  
 2010 LORT Annual Operating Test Sample Plan  
 2011 LORT Annual Operating Test Sample Plan  
 CR354048 CR395175  
 CR371727 CR395524  
 CR379359 CR397722  
 CR382609 CR397853  
 CR389653 CR407843  
 CR392086 CR413602  
 CR393099 CR416445  
 CR393946 CR416485  
 CR395024 CR438865  
 CR395160

**Simulator Deficiency Reports**

DR2010-3-0055  
 DR2010-3-0069  
 DR2011-3-0054  
 DR2011-3-0058

**Annual Simulator Testing Documents (2010)**

50% Steady State Operation  
 75% Steady State Operation  
 100% Steady State Operation

Transient Test 2, Simultaneous Trip of All Main Feedwater Pumps  
 Transient Test 3, Simultaneous Closure of All Main Steam Isolation Valves  
 Transient Test 5, Trip of Any Single Reactor Coolant Pump  
 Transient Test 9, Maximum Size Unisolable Main Steam Line Rupture  
 Transient Test 10, Slow RCS Depressurization to Saturated Conditions

**Section 1R12: Maintenance Effectiveness**

SAR001422, Formal Self-Assessment of the Millstone Maintenance Rule Program, dated May 19, 2011

Foxboro SPEC 200 Rack System Health Report, 2<sup>nd</sup> Quarter 2010 and 1<sup>st</sup> Quarter 2011

MRE011362	MRE013564
MRE011395	MRE013786
MRE011444	MRE013814
MRE011467	MRE013821
MRE013072	MRE013850
MRE013093	MRE013881

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

High Risk Contingency Plan for ZT-5269 'B' Feedwater Regulating Valve Position Transmitter  
 Trouble shooting plan for the TDAFW Pump steam leakage

OD (or ODM) for AFW condensate pump drainage

OP-3322, "Auxiliary Feedwater System," Revision 021-08

OU-M2-201, Attachment 1, "Millstone Unit 2 Shutdown Safety Assessment (SSA) Checklist," dated September 6, 2011

SP-3622.3, "AFW Pump 3FWA\*P2 Operational Readiness Test," Revision 017-03

Drawing 8600042, "AFW System – 004," Revision 2

WM-AA-301, Attachment 4, "Managing Medium Risk Significant Activities" for the August 16, 2011 Unit 3 down power for repairs to DSM pump and control valve

EOOS On-Line Risk Report for August 17, 2011

EOOS On-Line Risk report for August 31, 2011

CR436253, "23 Gallons received after draining the TDAFW pump steam supply standpipe," dated July 31, 2011

CR429530, "Minor refrigerant leak identified on 3HVQ\*ACUS1B," dated June 2, 2011

CR437134, "Freon Leak on 3VHQ\*ACUS1B," dated August 8, 2011

CR437692, "Re-evaluation of refrigerant leak on ESF air conditioner 3HVQ\*ACUS1B," dated August 11, 2011

CR437699, "Quantifying Refrigerant Leaks on ESF Air Conditioners," dated August 11, 2011

CR437906, "Lesson Learned from 3HVQ\*ACUS1B work," dated August 12, 2011

CR438136, "'B' MSR Drain Tank Level increased to High Level Dump Trip Setpoint," dated August 16, 2011

AWO 53102442156

AWO 53102450044

**Section 1R15: Operability Evaluations**

DOM-NAF-3, "GOTHIC Methodology for Analyzing the Response to Postulated Pipe Ruptures Inside Containment," Revision 0.0-P-A

MP2-LOE-129-EM, "Millstone Unit 2 Seismic (DBE) Structural Integrity Study of Underground Service Water Return Lines from EDG Coolers," Revision 0



SP 2610BO-001, "2-MS-201, 2-MS-202 and 2-MS-464 (SV-4188) Stroke and Timing IST,"  
Revision 001-03  
SP 2669A, "PEO Rounds," Revision 017-06  
SP 2669A-002, "Unit 2 Aux Building Rounds," Revision 052  
T-04438S2, "MP2 Issues with the Current LOCA Mass and Energy Releases and the Resulting  
Short-term Containment Pressure Impacts," Revision 0  
HVR088C, "Reactor Plant Ventilation," Revision 3.1  
FSAR Section 6.2 and Figure 6.2-4  
RAS for CR437419, "Unable to Adjust Power Range to within acceptance criteria in accordance  
with SP3441E01," dated August 24, 2011  
SP 3673.6, "Accident Monitoring Instrumentation," Revision 004-07  
SP 3441E01, "Gamma-Metric Neutron Flux/Shutdown Margin Monitor Channel Calibration,"  
Revision 011-01  
SP 3441E01-001, "Gamma-Metric Neutron Flux Monitor / Shutdown Margin Monitor Channel 1  
Calibration," Revision 008-05  
SP 3441E01-002, "Gamma-Metric Neutron Flux Monitor / Shutdown Margin Monitor Channel 2  
Calibration," Revision 008-05  
SP 3441E01-003, "Gamma-Metric Neutron Flux Monitor Channel 1 at Power Calibration,"  
Revision 008-003  
SP 3441E01-004, "Gamma-Metric Neutron Flux Monitor Channel 2 at Power Calibration,"  
Revision 008-003  
WO53102336608, "SV, 18M – Gamma-metric Neutron Flux Monitor," Revision 0  
WO53102237941, Gamma-metric Neutron Flux Monitor Channel Calibration (Perform at  
Power), Revision 0  
WO53102383229, "Calibration of Computer Points NME-DET1SR, DET1WR Following SAT 4  
Replacement," Revision 0  
WO53102383232, "Calibration of Computer Points NME-DET2SR, DET2WR Following SAT 4  
Replacement," Revision 0  
Instruction Manual No. 009, Neutron Flux Monitor  
PHUPE, "Unit 3 Gamma-Metrics Surveillance (SP 3441E01) Calculation and Acceptance  
Criteria Review Errors," dated September 13, 2011  
ETE-MP-2011-0111, "MP3 Gamma-Metrics Channel Calibration SP3441E01 Bandpass Filter  
Offset Voltage," dated September 23, 2011  
MRE014175, "SENG – Discovered as left data for Gamma Metrics channel 2 out of acceptance  
criteria," dated September 10, 2011  
DCR M3-08027, "SPU – Impact of Radiological accident Doses," Revision 0  
ODM000170 "Operation of CHS\*FLT3A with 3CHS\*V368 failed open"  
ODM000192 "D' RCP Seal Leakoff Increasing"  
CR365652  
CR409418  
CR434719  
CR434743  
CR434805  
CR438239, "NSR parts installed in the Unit 3 emergency diesels contrary to current MEPL,"  
dated August 17, 2011  
CR438375, "3HVR\*FN5 did not stop when control switch was operated from VP1B," dated June  
18, 2011  
CR438377, "3HVR\*FN5 did not stop when switch was placed in STOP," dated June 18, 2011

CR438510, "ABB Breaker (32G 2-2) for M33HVR-FN5 Failed to Open," dated June 18, 2011  
 CR373596, "Channel 2 Gamma Metrics As Found Data Found Outside of Allowable Limits," dated March 25, 2010  
 CR437419, "Gamma-metric Neutron Flux Monitor Channel 1 Cannot Meet Acceptance Criteria," dated August 10, 2011  
 CR440582, "TRM 7.4.1a(3) requires a Functionality Assessment for Unit 3 Gamma-Metrics," dated August 8, 2011  
 CR442297, "Discovered as left data for Gamma Metrics channel 2 out of acceptance criteria," dated September 10, 2011  
 CR442336, "Calculated Acceptance Criteria for Gamma-Metrics Channel 1 was incorrect," dated September 10, 2011  
 CR443761, "Need to Measure Gamma-Metrics Channel 2 Bandpass Filter Offset Voltage," dated September 20, 2011  
 CR443771, "Need to Replace test Generator Cards in both trains of MP3 Gamma-Metrics," dated September 20, 2011  
 CR444051, "Change Bandpass Filter bias voltage tolerance on MP3 Gamma-Metrics Wide Range NI," dated September 21, 2011  
 CR444078, "Gamma-Metrics Ch 2 Band Pass Filter Voltage Found Outside of Acceptance Criteria," dated September 21, 2011  
 CR444512, "Procedure SP3441E01 Requires Corrections," dated September 24, 2011  
 CR444753, "SP3441E02 Requires a Procedure Change," dated September 26, 2011  
 CR444482, "Procedure Change SP3441E01 Gamma Metrics Wide Range NI Bandpass Filter Cal," dated September 24, 2011  
 CR444050, "ODM000170 (Operation of CHS\*FLT3A with 3CHS\*V368 failed open) needs to be re-evaluated because trigger value of 6 inches DP on 3CHS\*FLT3A," dated September 21, 2011  
 CR444601, "Trend of 'D' RCP #1 seal leakoff continues to increase showing seal degradation," dated September 25, 2011

#### **Section 1R18: Plant Modifications**

DC MP3-11-01008, "MPS RWST Level Switch Upgrade," Revision 5  
 SP3451B03, "RWST Level Switch (3QSS\*LS54A, 3QSS\*LS54C) and Pump (3RHS\*P1A) Interlock Channel Calibration," Revision 8  
 SP3451B04, "RWST Level Switch (3QSS\*LS54B, 3QSS\*LS54D) and Pump (3RHS\*P1B) Interlock Channel Calibration," Revision 4  
 SP3451B05, "RWST Level Switch (3QSS\*LS56A, 3QSS\*LS56C) and Pump (3QSS\*P3A) Interlock Channel Calibration," Revision 6  
 SP3451B06, "RWST Level Switch (3QSS\*LS56B, 3QSS\*LS56D) and Pump (3QSS\*P3B) Interlock Channel Calibration," Revision 5

#### **Section 1R19: Post Maintenance Testing**

SP 2411A, "CEA Motion Inhibit Verification, (deviation) Data Sheet," Revision 002-04  
 SP 2411B, "PDIL Alarm Verification sheet," Revision 000-04  
 SP 2604XS-011, "2-FW-51B Accumulator Test Data," Revision 000-01  
 RAS for CR437419, "Unable to Adjust Power Range to within acceptance criteria in accordance with SP3441E01," dated August 24, 2011  
 SP 3673.6, "Accident Monitoring Instrumentation," Revision 004-07

SP 3441E01, "Gamma-Metric Neutron Flux/Shutdown Margin Monitor Channel Calibration," Revision 011-01  
 SP 3441E01-001, "Gamma-Metric Neutron Flux Monitor / Shutdown Margin Monitor Channel 1 Calibration," Revision 008-05  
 SP 3441E01-002, "Gamma-Metric Neutron Flux Monitor / Shutdown Margin Monitor Channel 2 Calibration," Revision 008-05  
 SP 3441E01-003, "Gamma-Metric Neutron Flux Monitor Channel 1 at Power Calibration," Revision 008-003  
 SP 3441E01-004, "Gamma-Metric Neutron Flux Monitor Channel 2 at Power Calibration," Revision 008-003  
 Instruction Manual No. 009, Neutron Flux Monitor  
 PHUPE, "Unit 3 Gamma-Metrics Surveillance (3441E01) Calculation and Acceptance Criteria Review Errors," dated September 13, 2011  
 ETE-MP-2011-0111, "MP3 Gamma-Metrics Channel Calibration SP3441E01 Bandpass Filter Offset Voltage," dated September 23, 2011  
 MRE014175, "SENG – Discovered as left data for Gamma Metrics channel 2 out of acceptance criteria," dated September 10, 2011  
 53102336608, "SV, 18M – Gamma-metric Neutron Flux Monitor," Revision 0  
 53102237941, "Gamma-metric Neutron Flux Monitor Channel Calibration" (Perform at Power), Revision 0  
 53102383229, "Calibration of Computer Points NME-DET1SR, DET1WR Following SAT 4 Replacement," Revision 0  
 53102383232, "Calibration of Computer Points NME-DET2SR, DET2WR Following SAT 4 Replacement," Revision 0  
 53102295021  
 53102307730  
 53102375413  
 53102394445  
 53102438250  
 53102450635  
 53102457393  
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 CR373596, "Channel 2 Gamma Metrics As Found Data Found Outside of Allowable Limits," dated March 25, 2010  
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 CR442297, "Discovered as left data for Gamma Metrics channel 2 out of acceptance criteria," dated September 10, 2011  
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 CR443761, "Need to Measure Gamma-Metrics Channel 2 Bandpass Filter Offset Voltage," dated September 20, 2011  
 CR443771, "Need to Replace test Generator Cards in both trains of MP3 Gamma-Metrics," dated September 20, 2011  
 CR444051, "Change Bandpass Filter bias voltage tolerance on MP3 Gamma-Metrics Wide Range NI," dated September 21, 2011

CR444078, "Gamma-Metrics Ch 2 Band Pass Filter Voltage Found Outside of Acceptance Criteria," dated September 21, 2011  
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**Section 1R20: Refueling and Other Outages**

OP 2202, "Reactor Startup ICCE," Revision 022-02  
 OP 2204, "Load Changes," Revision 023-14  
 OP 2206, "Reactor Shutdown," Revision 011-03  
 CR441302  
 CR441367  
 CR441398  
 CR441448

**Section 1R22: Surveillance Testing**

SP-3646A.1, "Emergency Diesel Generator 'A' Operability Test," Revision 018-05  
 SP-3646A.1-001, "Emergency Diesel Generator 'A' Operability Tests," Revision 018-02  
 SP 3622.2, "Auxiliary Feedwater Pump 3FWA\*P1B Operational Test," Revision 016-02  
 SP 3622.2-001, "Auxiliary Feedwater Pump 3FWA\*P1B IST Group 'B' Pump Test," Revision 014-04  
 SP 3441E01, "Gamma-Metric Neutron Flux/Shutdown Margin Monitor Channel Calibration," Revision 011-01  
 SP 3441E01-001, "Gamma-Metric Neutron Flux Monitor / Shutdown Margin Monitor Channel 1 Calibration," Revision 008-05  
 SP 3441E01-002, "Gamma-Metric Neutron Flux Monitor / Shutdown Margin Monitor Channel 2 Calibration," Revision 008-05  
 CR437368, "'A' EDG out of spec reading on OP-3364-14," dated August 9, 2011  
 CR 437331, "Sparkling noted at outboard slip ring brushes on Unit 3 'A' Diesel Generator during PM," dated August 9, 2011  
 CR437315, "'A' Rocker Arm oil level is < ¼ when diesel is running," dated August 9, 2011  
 CR437993, "Packing leakage observed at 3FWA\*V984," dated August 15, 2011  
 CR437998, "Packing leakage discovered at packing area of 3FWA\*V024," dated August 15, 2011  
 CR443761, "Need to Measure Gamma-Metrics Channel 2 Bandpass Filter Offset Voltage," dated September 20, 2011  
 CR443771, "Need to Replace test Generator Cards in both trains of MP3 Gamma-Metrics," dated September 20, 2011  
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## **Section 1EP2: Alert and Notification System Evaluation**

FEMA REP-10 Design Report – Millstone Alert and Notification System, January 2010  
 MP-26-EPA-FAP08, Alert Notification System Administration, Revision 5  
 MP-26-EPA-FAP09, Alert Notification System Test and Maintenance, Revision 6  
 MP-26-EPA-FAP11, Public Alert System Siren Acoustical Performance Testing, Revision 0

### **Condition Reports**

CR365815	CR399956
CR379996	CR400981
CR380252	CR405453
CR388347	CR425923
CR389490	CR426106
CR390406	CR429283
CR390409	CR434200
CR395661	CR436004

## **Section 1EP3: Emergency Response Organization Staffing and Augmentation System**

Millstone Power Station Emergency Plan, Revision 43  
 MP-26-EPI-FAP07, Notifications and Communications, Revision 12  
 TR-MP-TPG-2400, Emergency Plan Training (EPLAN), Revision 23  
 MP-26-EPI-FAP07, Notifications and Communications, Revision 12  
 MP-26-EPA-FAP01, Management Program for Maintaining Emergency Preparedness, Revision 9  
 SERO Roster  
 TR-MP-TPG-2400, Millstone Power Station Emergency Plan Training (EPLAN), Revision 23  
 Monthly SERO Unannounced ENRS Call In Summary (Come-in), July 2011  
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## **Section 1EP4: Emergency Action Level and Emergency Plan Changes**

EP-AA-101, 10 CFR 50.54 (q) Change Evaluation, Revision 3  
 EP-AA-601, Emergency Press Releases

### **Change Evaluations**

MP-10-048, 10 CFR 50.54 (q) Program Evaluation Effectiveness Review, Revision 43 E-Plan Changes, December 2010  
 MP-11-003, 10 CFR 50.54 (q) Program Evaluation Effectiveness Review, Notification/Communications, January 2011  
 MP-10-033, 10 CFR 50.54(q) Program Evaluation Effectiveness Review, Fleet Initiative-Improve News Releases, November 2010  
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 MP-10-040, 10 CFR 50.54 (q) Program Evaluation Effectiveness Review, E-Plan Areva Lab Closure, November 2010  
 MP-10-047, 10 CFR 50.54 (q) Program Evaluation Effectiveness Review, Drill and Exercise Program, October 2010

**Section 1EP5: Correction of Emergency Preparedness Weaknesses**

PI-AA-200, Corrective Action, Revision 16

EP-AA-303, Equipment Important to Emergency Response, Revision 2

EP-AA-400, Drill and Exercise Program, Revision 1

Millstone Unit 2, Emergency Preparedness Evaluation, Unusual Event Declaration Final Report, November 15, 2009

Audit 11-02: Emergency Preparedness, April 13, 2011

Audit 10-02: Emergency Preparedness, April 22, 2010

Unit 1 and Environmental Sampling Training Drill, December 16, 2010

CFD 10-04, NRC/FEMA Evaluated Exercise Report, October 19, 2010

CFD 09-08, Unit 1 Tabletop Training Drill, December 10, 2009

CFD 09-04, Unit 3 SERO Training Drills

**Condition Reports**

CR 410507	CR 434933	CR 434933
CR 409805	CR 435266	CR 434939
CR 436242	CR 435031	CR 434938
CR 436074	CR 431001	CR 415922
CR 436021	CR 435101	
CR 436004	CR 416349	
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CR 434992	CR 412793	
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**Section 2RS07: Radiological Environmental Monitoring Program (REMP)****Procedures**

RPM 2.5.9, Dry Shielded Canister (DSC) Surveys (ISFSI)

RPM 1.3.9, Area Monitoring

MP-22-REC-BAP01, Radiological Effluent Monitoring – Site Dose Calculation Manual

MP-22-GWP-PRG, Groundwater Protection Program

REMP 1.1, Environmental Collection Schedule

REMP 1.2, Radiological Environmental Monitoring (REMP) Sampling &amp; Analysis

REMP 1.3, Land Use Census

REMP 1.4, Quality Control of the Radiological Environmental Monitoring Program

REMP 1.5, Annual Radiological Environmental Operating Report

REMP 2.1, Sample Identification and Transmittal to the Contractor for Analysis

REMP 2.2, Environmental TLD Collection and Distribution

REMP 2.3, Airborne Particulate and Iodine Sampling

REMP 2.4, Soil Sampling

REMP 2.5, Milk Sampling

REMP 2.6, Terrestrial Biota Sampling

REMP 2.7, Terrestrial Water Sampling

REMP 2.8, Groundwater Sampling

ENV 2003, Aquatic Sampling for Radiological Environmental Monitoring Program

REMP 2.8, Groundwater Sampling

C SP 400.2/.3, Meteorological Tower Instruments (Primary/Backup) Calibration

Sampling Sites

Air Particulate/Iodine: 1-I, 2-I, 3-I, 4-I, 10-I, 11-I, 15-C, 27-I

Sea Water: Nos. 32-I

Oyster Sampling: No. 31-I

Thermoluminescent Dosimeters Nos. 1-I, 2-I, 3-I, 4-I, 5-I, 6-I, 7-I, 8-I, 9-I, 10-I, 11-I, 15-C, 27-I, 44-I, 51-I, 64-I, 73-X, 75-X, 13-C, 45-I

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Audit 09-15, ODCM/REMP/EPP

Nuclear Oversight Observation Log Reports regarding environmental monitoring/effluent releases

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Instrument Calibration Records

Air Sampler Nos. 6083, 6084, 6085, 6086, 6223, 6386, 6338, 6147

Meteorological Instrumentation (Primary & Backup) dated July 27, 2011

Miscellaneous Reports

2009 and 2010 Annual Radiological Environmental Operating Reports

Quality Assurance Annual Results of AREVA Environmental Laboratory 4<sup>th</sup> quarter 2010

Unit 2 Operator Plant Equipment Rounds Log for ISFSI

2010 & 2011 Quarterly Meteorological Data Certification

2009, 2010 and 2011 Quarterly Area (ISFSI) TLD Monitoring Report

Teledyne Brown Quarterly Cross Check Program – 3<sup>rd</sup> and 4<sup>th</sup> quarter 2010

50.75 (g) Decommissioning Records

RETS/ODCM Performance Indicator Data for June 2010 through July 2011

ISFSI TLD Monitoring Data 3<sup>rd</sup> Quarter 2009 through 1<sup>st</sup> Quarter 2011

Aquatic REMP Oyster Sampling Manual

REMP Investigative Reports for 2011

2010 and 2011 Quarterly REMP Terrestrial Sampling Reports

D/Q Analysis to Support REMP Sampling

Land Use Census Review 2010

40CFR190 Offsite Direct Shine Dose Estimate for 2010

**Section 40A1: Performance Indicator (PI) Verification**

Condensate Storage Tank and Auxiliary Feedwater System Health Report 2<sup>nd</sup> quarter 2011

Containment Spray System Health Report, 2<sup>nd</sup> quarter 2011

Emergency Diesel Generator and Fuel Oil System Health Report 2<sup>nd</sup> quarter 2011

EP-AA-103, Emergency Preparedness Performance Indicators, Revision 0

High Pressure Safety Injection System Health Report, 2<sup>nd</sup> quarter 2011

Performance Indicator Data – 4<sup>th</sup> quarter 2010 to 2<sup>nd</sup> quarter 2011

RBCCW System Health Report, 2<sup>nd</sup> quarter 2011

Service Water System Health Report, 2<sup>nd</sup> quarter 2011

MRE012331	MRE013148	MRE012534
MRE012473	MRE013179	MRE013537
MRE012480	MRE013196	MRE013538
MRE012481	MRE013409	MRE013543
MRE012588	MRE013459	MRE013547
MRE012589	MRE013475	MRE013565
MRE012631	MRE013494	MRE013574
MRE012641	MRE013500	MRE013576
MRE012647	MRE013506	MRE013606
MRE012648	MRE013508	MRE013613
MRE012650	MRE013510	MRE013619
MRE012654	MRE013511	MRE013621
MRE012696	MRE013512	MRE013640
MRE012701	MRE013513	MRE013645
MRE012705	MRE013515	MRE013669
MRE012706	MRE013517	MRE013678
MRE012843	MRE013518	MRE013885
MRE012955	MRE013525	MRE013919
MRE013042	MRE013529	MRE013936
MRE013046	MRE013530	MRE014035
MRE013061	MRE013531	
MRE013111	MRE013532	

**Section 40A2: Identification and Resolution of Problems**

OD00436, Flange leak in 10" SW line to 'A' EDG  
 ODM000214, SIT#3 leaking  
 ODM000215, FRV positioner not reliable  
 OP-AA-1700, "Operations Aggregate Impact," Revision 3  
 OPSTAT Database  
 SO-11-011, 2-MS-79A/B may not ramp closed as required upon a power reduction  
 CR440376  
 CR446133

**Section 40A3: Event Follow-up**

AOP 2560, "Storms, Winds and High Tides," Revision 010-06  
 AOP 3569, "Severe Weather Conditions," Revision 017-00  
 AOP 3575, "Rapid Downpower," Revision 017-05



## LIST OF ACRONYMS

AC	alternating current
ADAMS	Agencywide Documents Access and Management System
AFW	auxiliary feedwater
ALARA	as low as reasonably achievable
ANS	alert and notification system
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CFR	Code of Federal Regulations
CIV	containment isolation valve
CR	condition report
CW	circulating water
DNB	departure from nucleate boiling
DNC	Dominion Nuclear Connecticut
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EAL	emergency action level
EDG	emergency diesel generator
EP	emergency preparedness
ERO	emergency response organization
ESF	engineered safety feature
FSAR	final safety analysis report
HPSI	high pressure safety injection
I&C	instrumentation and control
IMC	Inspection Manual Chapter
ISFSI	independent spent Fuel storage installation
IST	in-service Testing
LER	Licensee Event Reports
mrem	millirem
MSPI	mitigating system performance indication
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OD	operability determinations
ODCM	off-site dose calculation manual
OOS	out of service
PARS	Publicly Available Records System
PI	performance indicator
PI&R	problem identification and resolution
PMT	post maintenance testing
RBCCW	reactor building closed cooling water
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Effluents Technical Specification
RHR	residual heat removal
RSS	recirculation spray system
SBO	station blackout

SDP	Significance Determination Process
SG	steam generator
SIH	safety injection high
SW	service water
TLD	thermoluminescent dosimeter
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
UT	ultrasonic testing
VHRA	very high radiation areas
WO	work order